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FIG. 1

1 CTATGGCTCTTAGCCAAAACCAAGCCAAGTTTCCAAAGGATTCGTCGTGATGATTGG  
 -32 M A L S Q N Q A K F S K G F V V M I W

60 GTACTATTCAATTGCTTGCTATAACTCAACTGAAGCTAGTCTAACCAATGCCAACAG  
 5 -13 V L F I A C A I T S T E A S L T K C Q Q  
 -1 +1

120 CTCCAGGCCTCGGCTAACAGTGGCTGATAGGTACTTATGTACCACAATGCAAAGAACG  
 8 L Q A S A N S G L I G T Y V P Q C K E T

180 GGAGAGTTCGAAGAAAAACAATGCTGGGATCGACTGGTTACTGTTGGTGTGGATGAA  
 10 28 G E F E E K Q C W G S T G Y C W C V D E

240 GATGGAAAAGAGATTCTAGGAACCAAGATCCGTGGATCTCCGGATTGCAGCCGCAGAAAA  
 48 D G K E I L G T K I R G S P D C S R R K

300 GCCCGCTTAACACTTGCCAGATGATGCAAGCCATCATTGTTAATGTCCTGGTTGGTGT  
 68 A A L T L C Q M M Q A I I V N V P G W C

15 360 GCCCCTCCATCGTGTAAAGCTGACGGCAGTTTGACGAGGTTCACTGCTGCGCAAGTAAT  
 88 G P P S C K A D G S F D E V Q C C A S N

420 GGAGAATGCTACTGTGTGGATAAGAAAGGAAAGAACCTGAAGGCACAAGACAACAGGGA  
 108 G E C Y C V D K K G K E L E G T R Q Q G

480 AGGCCAACCTGCGAAAGACACCTAACGGAATGCGAGGAAGCTCGAATCAAGGCGCATICA  
 20 128 R P T C E R H L S E C E E A R I K A H S

540 AACAGTCTTCGTGTTGAGATGTTCGTGCAGAGTGTGTTAGAAGATGGATCATATAACCCA  
 148 N S L R V E M F V P E C L E D G S Y N P

600 GTACAGTGGCTGGCCTAGCACAGGATACTGTTGGTGCCTCGATGAAGGAGGGTAAAGGTA  
 168 V Q C W P S T G Y C W C V D E G G V K V

25

660 CCAGGTTCCGATGTCAGATTAAACGCCACATGCTAACAGAAACACAGTGAACAAAGT  
 188 P G S D V R F K R P T C ---  
 199

720 GGCTAGTTCCAGATCGAAAATAACTACAAAGGATTAATAAAATGTTAAAATAATTCTC  
 30 780 AATTCGGCTGTGATATATTTTCAAGATAATTAAATCTGCATGTAGTTAACAGAAAAC  
 840 AATCTCAACTAGAAATAAGACTACGGTAATAATGACA

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FIG. 2

thyroglobulin domains with demonstrated CPI activity

human invariant chain	LTKCQ--EEVSHIPAVHPGSFRPKC-DENGNYLPLQCYGSIG---	-YCMCVFPNGTEVPNTRSR-GHHN-CSES
rat invariant chain (192-258)	KVLTCKQ--EEVSHIPDVHPGAFRPKV-DENGNYIMPLQCHGSTG---	-YCMCVFPNGTEVPHTKSR-GRHN-CSEP
chum salmon egg inh.	HVPIDGIFHLLTPCE--LARDAATHPIGGFIPTC-DYNGQYTPEQCGWGSTG---	-YCMCVNNSGQKLPGTDTPPGSASN
equistatin cDNA DOMAIN I	SLTKCQ--QLQASANSGLIGTYVQC-KETGEFEEKQCWGSTG---	-YCMCVDEDGKEILGTKIR-GSPD-CSRRK
equistatin purified domain I (protein sequence variants)	SLSKCQ--QLQASANSGLIGAYVQC--KETGEFEEKQCWGSTG---	-YCMCVDEDGKEILGTKIR-GSPD-CSRRK

V  
T

thyroglobulin domains with demonstrated aspartic protease inhibitor activity (either domain II or III)

equistatin cDNA DOMAIN II	AALTLCQ--MMQAIIIVNPGWCWPSC-KADGSFDEVQCASNG---	-ECYCVDDKKGKELEGGTRQQ-GRP-TCERHL
equistatin purified domain II (protein sequence variants)	AALTLCQ--MMQAIIIVNPGWCWPSC-KADGSFDEVQCASNG---	-ECYCVDDKKGKELEGGTRQQ-GRP-SCERHL
equistatin cDNA DOMAIN III	SECEEARIKAHSNSLRVEMFVPEC-LEDGSYNPVQCPYSTG---	-YCMCVDEGGVKVPGSDVRFKRP-TC
equistatin purified domain III (protein sequence variants)	SPCEEARIQQAHSNSLRVGMFVPPQC-LEDGSYNPVQCPYSTG---	-YCMCVDEGGVKVPGSDVRFKRP-TC

D  
E      IK      L

thyroglobulin domains with unknown protease inhibitor activity

mouse nidogen (824-892)	EHILGAAGGADAQRPTLQGMFVPPQC-DEYGHYVPTQCHHSTG---	-YCMCVDRDGRELEGSRTPGMRPPCLST
human epithelial glycoprot (75-146)	GSKLGRRAKPEGALQNNNDGLYDPDC-DESSGLEFKAKQCNNG-TS---	-MCWCVNNTAGVRRTDKDTEIT---CSERVRTY
bull frog saxiphilin(178-226)	KCLKERQVALGDEKVLGRCFVPPQC-DEKGNYEPQQFHGSTG---	-YSWCVNNAIGEEIAGTKTPPGKIPAC

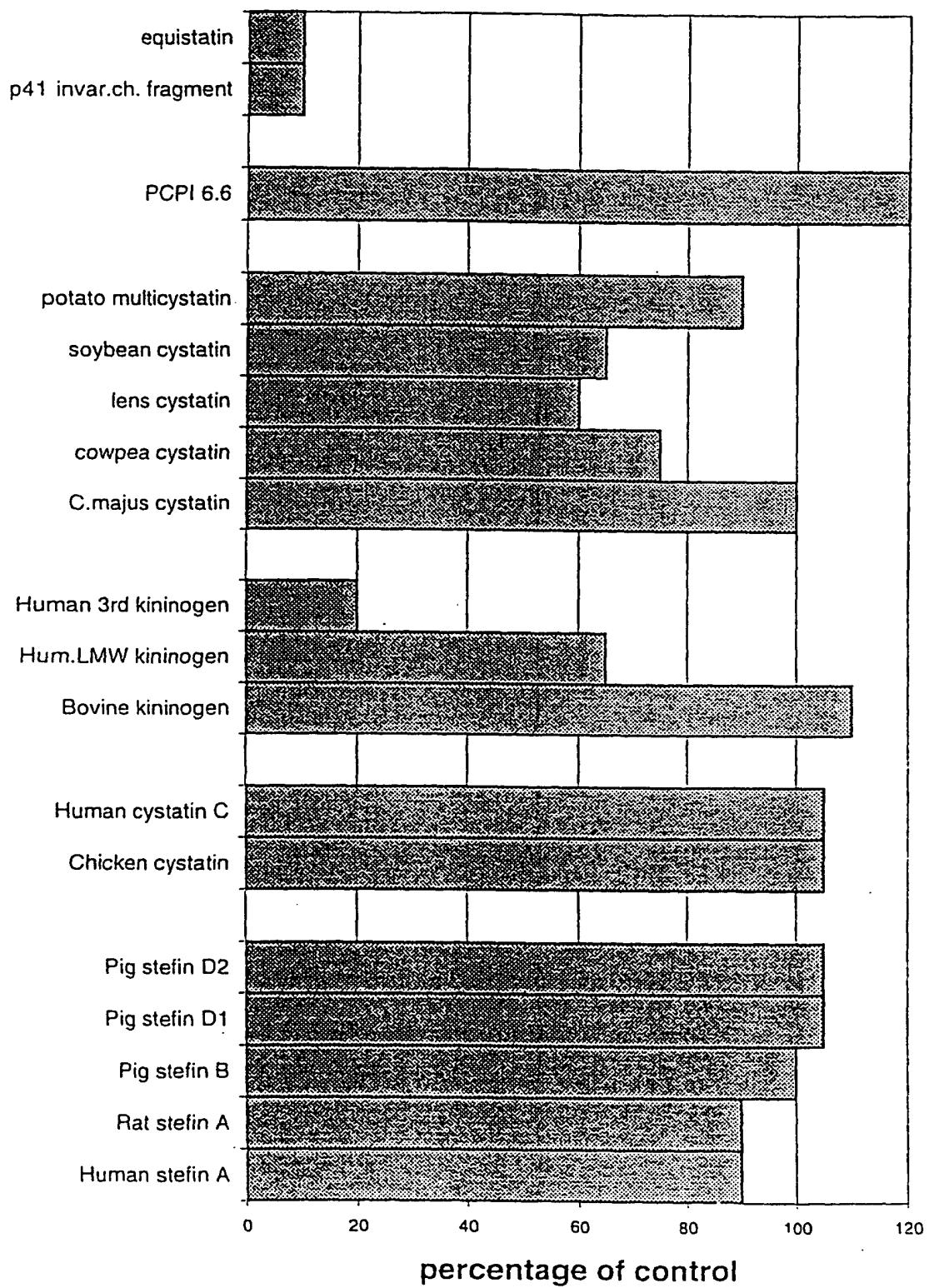
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(cont.) Fig.2

YVPQC-AEDGFSQTVQOCONDGR---SCWCVGANGSEVLGSRQP-GRPVCAC  
 YLPQC-QDSDGYAPVQCDVQHV---QCWCVDAAEGMEVYGTQL-GRP KRC  
 FVPSC-TTEGSYEDVQCF-S-G---ECWCVN SWGKELPGSRVRDGQP-RC  
 FVPAC-TSEGHLPLVQCFN--S---ECYCVDAEGQAI PGTRSAIGPKKC  
 KTRCQLEREHILGAAGGAQRPTLQGMFVPQC-DEYGHYVBTQCHHSTG---YCWCVDRDGRELEGSRTPPGMRPPCLSTVAP  
 QCPSSLCEVLQSGVPSRRSPGYS PACRAEDGGFSPVQCDPAQG---SCWCVLGS GEEVPGTRVA-GSQPACESP  
 YGPCCRREMEDTLNLKFLNVLS PRGVHIPNC-DKKGFYKKKQCRPSKGKRGFCWVCKYQPLPYTTKGKEDVHCYSMSQSK  
 QKPGGLPCQNE MNRIGKL SKGKSLLGA FIPRC-NEEGYYKATQCHGSTG---QCWCVDKYGNELAGSRKQ-GAV-SCEE EQET  
 consensus  
 C-----//-----P-C-----G-----QC-----//-----C-----//-----C-----//-----C-----//-----C

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Figure 3



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Figure 4a

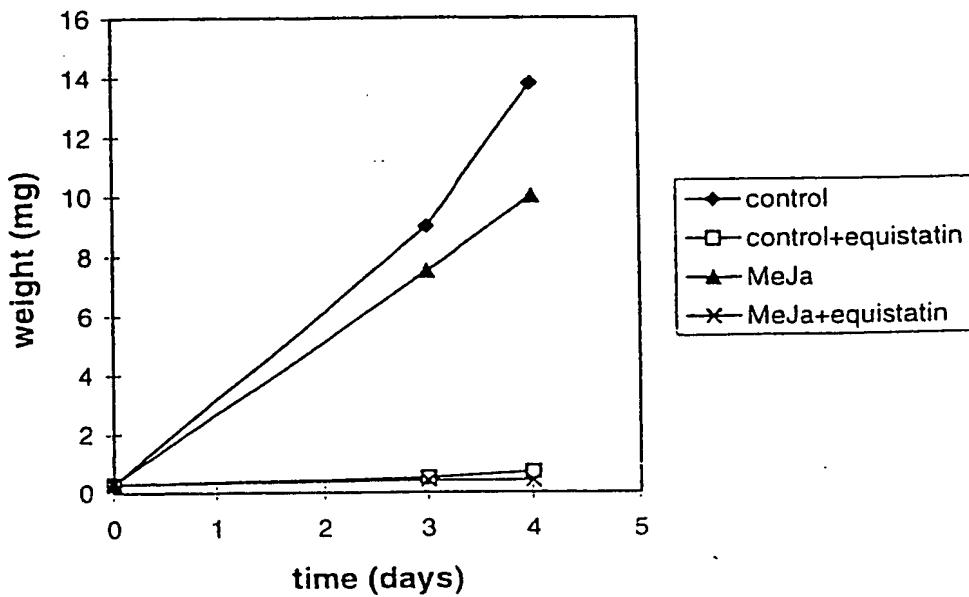
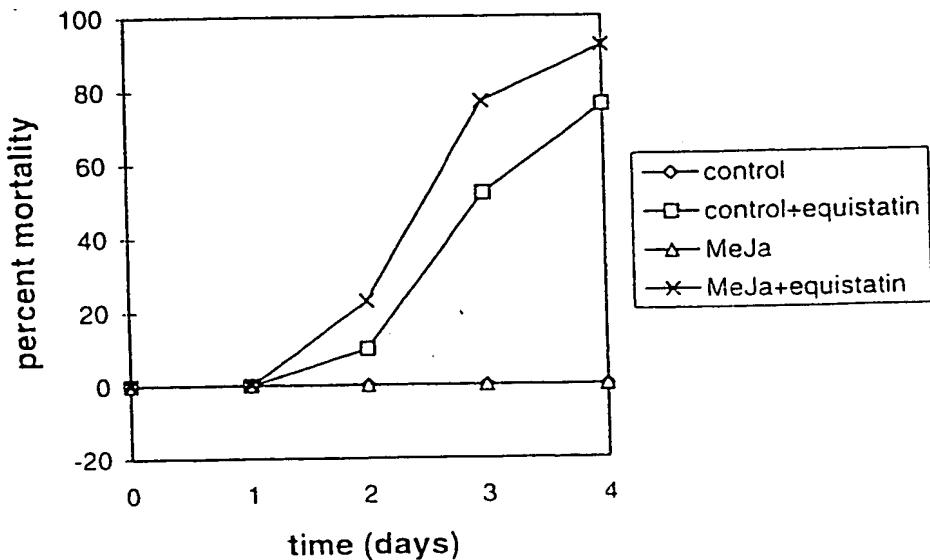
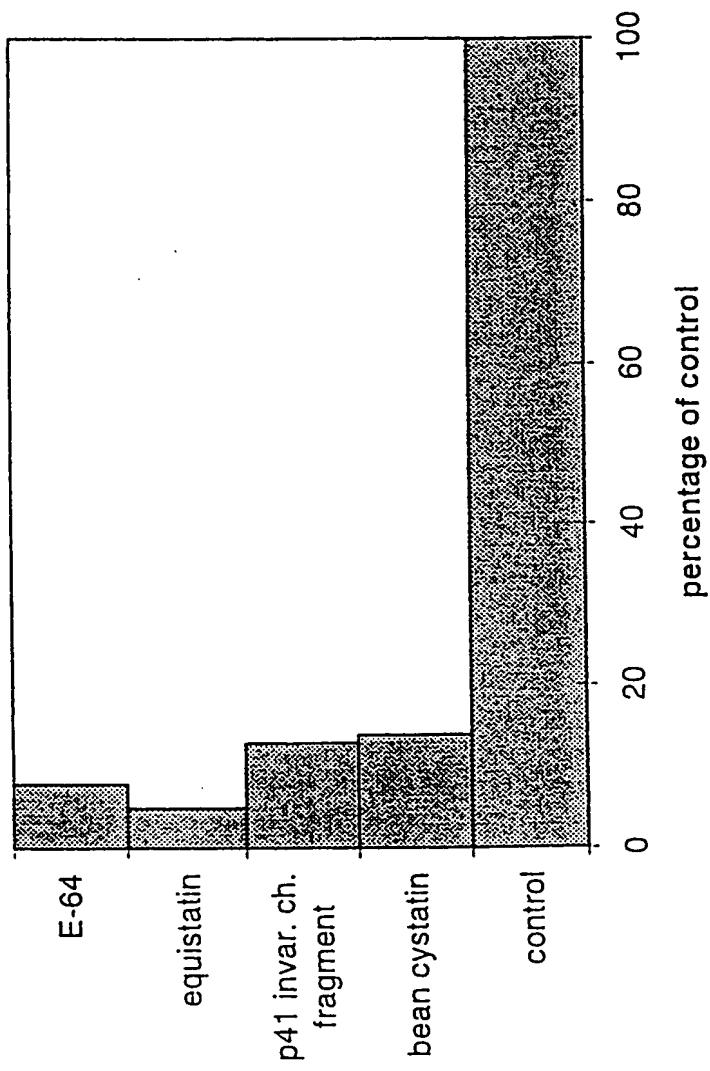


Figure 4b



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**Figure 5**

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## Fecundity of thrips adults on diet with equistatin (day 2)

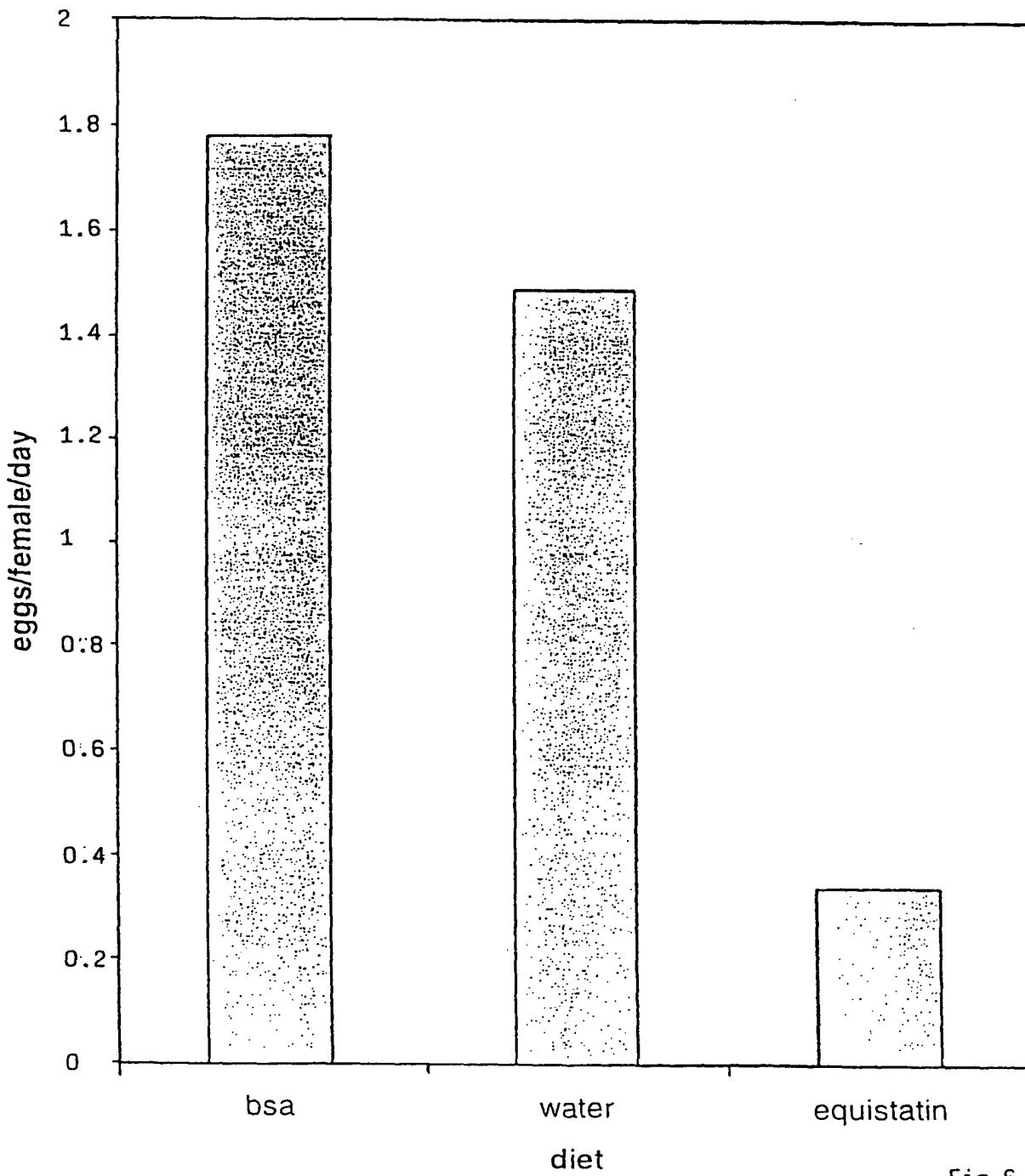
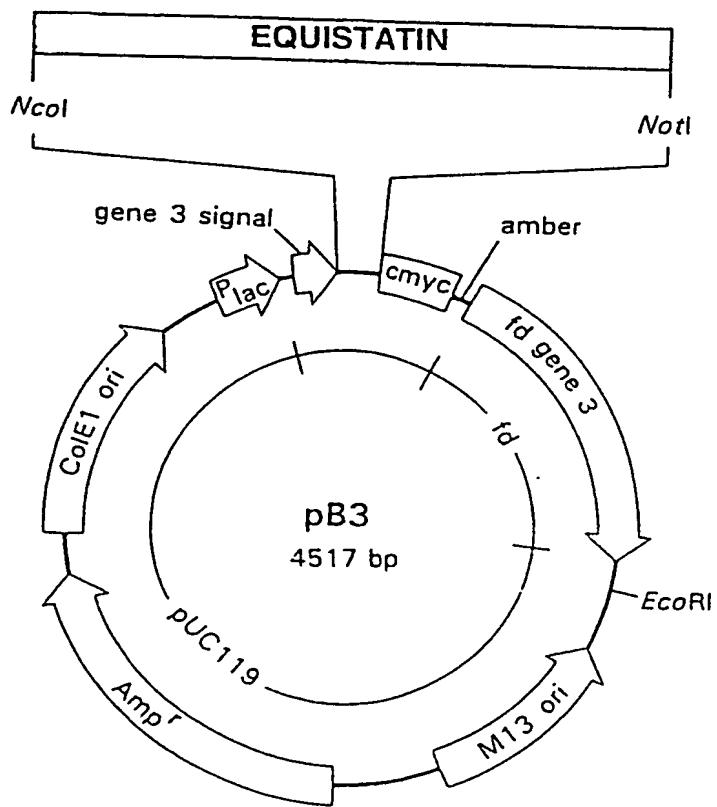


Fig.6

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FIG. 7



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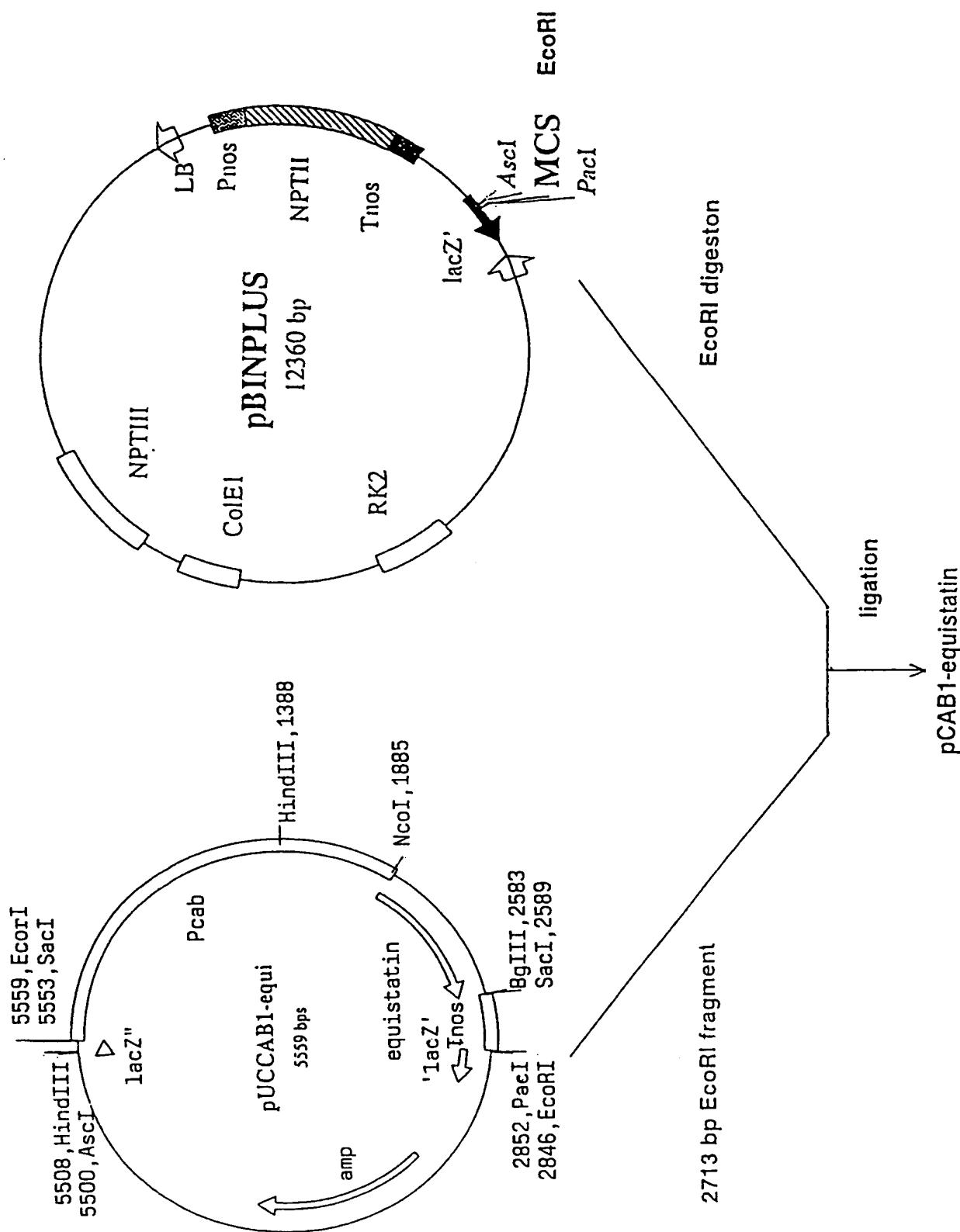


FIG. 8

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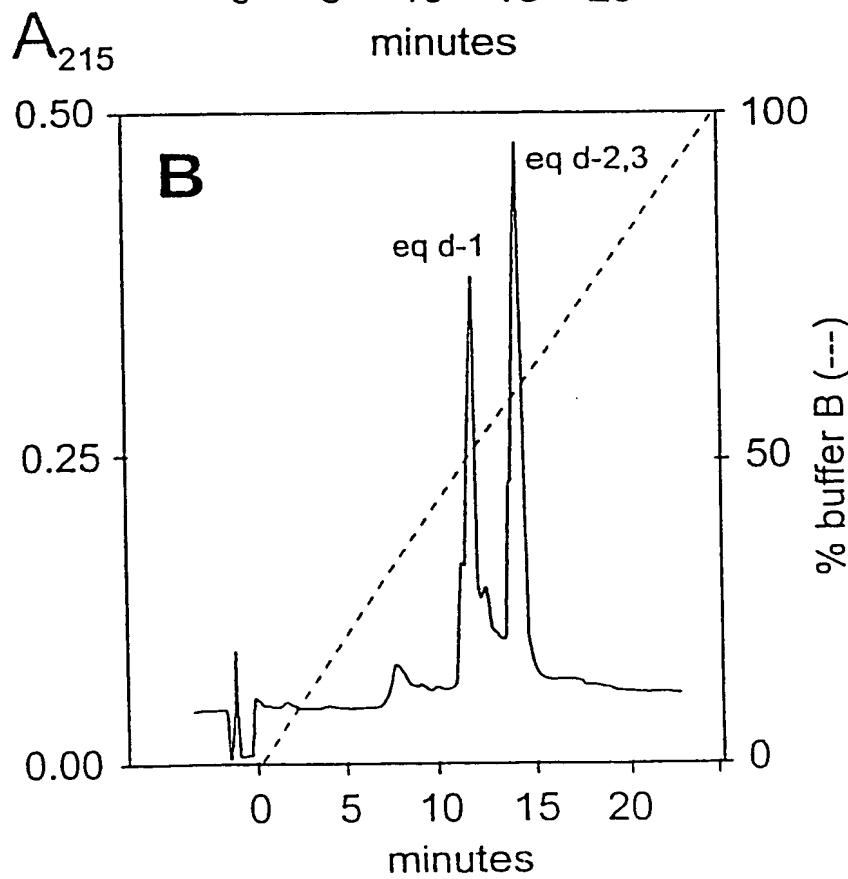
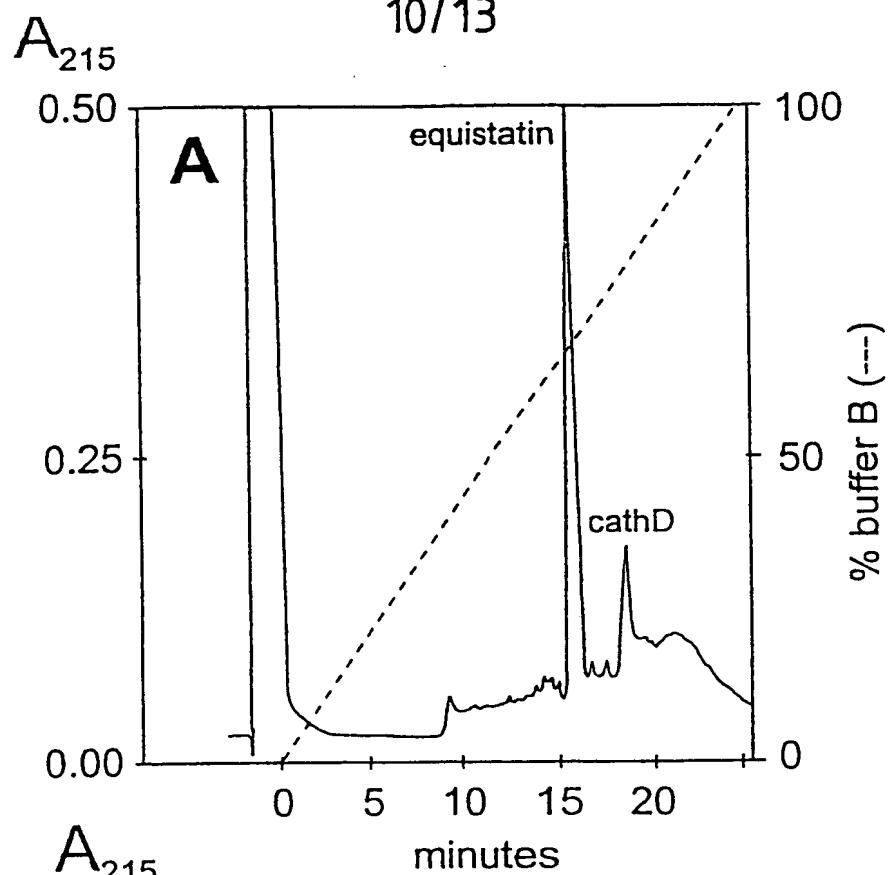
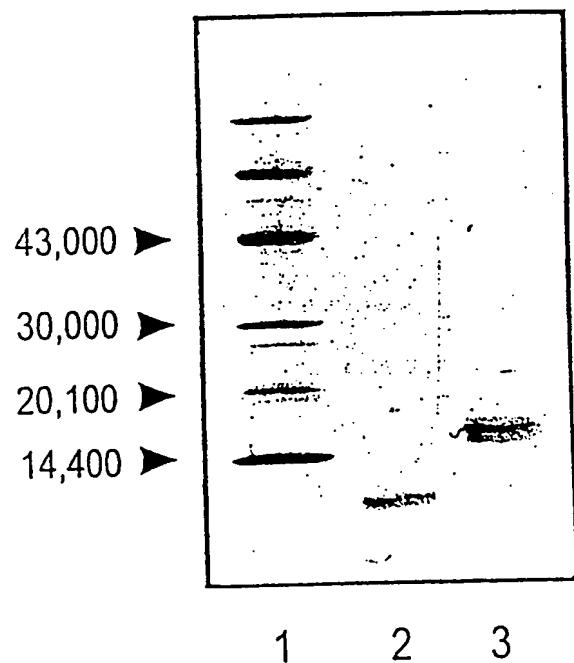


Fig. 9

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A



B

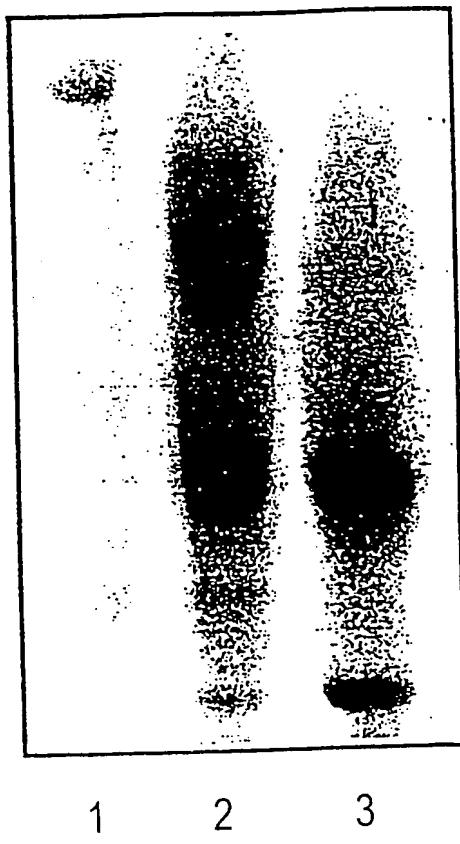


Fig.10

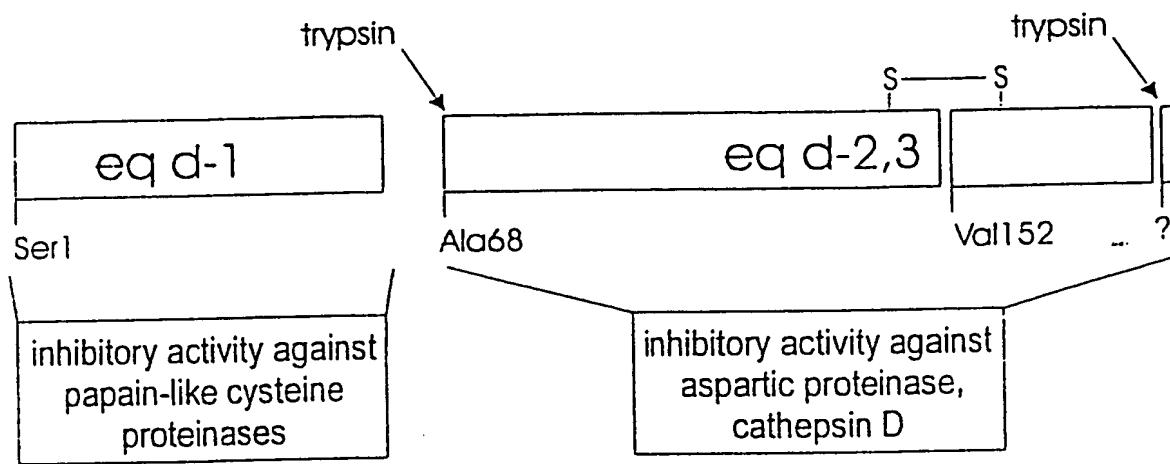


Fig.11

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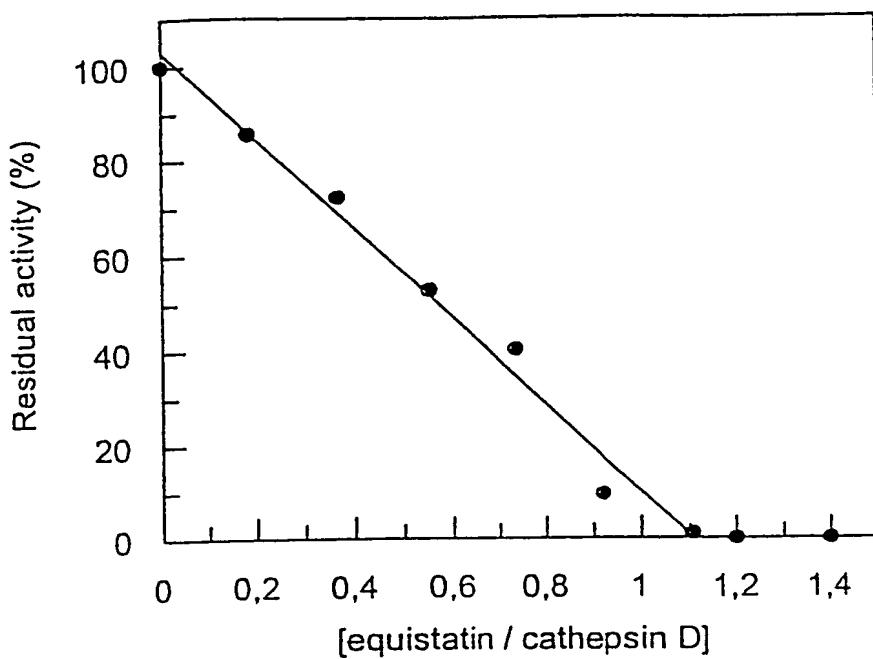


Fig.12